Release notes for ENDF/B Development std-006_C_000 evaluation

November 1, 2016

- `checkr` Warnings:

  1. The standards sublibrary uses NSUB=19, but this was never officially adopted by CSEWG for the ENDF format.
     MAT= 600, MF= 1, MT=451 (0): Stds. NSUB

     ```
     ERROR(S) FOUND IN MAT= 600, MF= 1, MT=451
        INVALID SUBLIBRARY NUMBER NSUB =    19           RECORD NUMBER       4
     ```

  2. A previous error halted parsing of the current section
     MAT= 600, MF= 1, MT=451 (2): Parsing stopped

     ```
     ERROR(S) FOUND IN MAT= 600, MF= 1, MT=451
        SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      379 TO     381
     ```

  3. The standards sublibrary is not meant for transport calculations and is not required to be complete.
     MAT= 600, MF= 3, MT=451 (0): Incompleteness

     ```
     ERROR(S) FOUND IN MAT= 600, MF= 3, MT=451
        LRP =  0 Requires the presence of File 2, but it is missing.
     ```

  4. CHECKR does not realize that the standards library is a neutron data sublibrary.
     MAT= 600, MF= 4, MT= 2 (0): Ang. Dist. OK

     ```
     ERROR(S) FOUND IN MAT= 600, MF= 4, MT=  2
        FILE  4 ALLOWED ONLY IN A NEUTRON DATA SUBLIBRARYRECORD NUMBER     701
     ```

  5. A previous error halted parsing of the current section
     MAT= 600, MF= 4, MT= 2 (1): Parsing stopped

     ```
     ERROR(S) FOUND IN MAT= 600, MF= 4, MT=  2
        SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      701 TO    1734
     ```

  6. The standards sublibrary is not meant for transport calculations and is not required to be complete.
     MAT= 600, MF=33, MT= 2 (1): Incompleteness

     ```
     ERROR(S) FOUND IN MAT= 600, MF=33, MT=  2
        SECTION MAT=  600   MF=  4   MT=   2   IS MISSING
     ```

- `checkr` Errors:

  1. A variable is outside the allowed ENDF range
     MAT= 600, MF= 1, MT=451 (1): Variable range

     ```
     ERROR(S) FOUND IN MAT= 600, MF= 1, MT=451
        MOD =     1 OUT OF RANGE     0 -     0           RECORD NUMBER     379
     ```

  2. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT= 600, MF=33, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT= 600, MF=33, MT=  2
   SECTION 33/  2 NOT IN DIRECTORY                 RECORD NUMBER    1736
```

- `fizcon` Errors:

  1. Missing files (probably spectra for outgoing particles)
     MAT 600 MF 6 (1): Missing files (a)

```
ERROR(S) - MISSING SECTIONS IN MAT  600 MF  6
   PRESENCE OF FILE 3, MT=   2 REQUIRES AN EQUIVALENT SECTION IN FILE 6
```

- `psyche` Warnings:

  1. The standards sublibrary is not meant for transport calculations and is not required to be complete.
     FILE 4 / SECTION 2 / CANNOT PERFORM WICK LIMIT TEST BECAUSE TOTAL AND/OR ELASTIC CROSS SECTIONS ARE MISSING. (0): Incompleteness

```
FILE  4
   SECTION   2
        CANNOT PERFORM WICK LIMIT TEST BECAUSE TOTAL AND/OR ELASTIC CROSS SECTIONS ARE MISSING.
```

- `fudge-4.0` Warnings:

  1. Indicates a test was skipped due to missing information
     reactionSuite: (Error # 0): Test skipped

```
WARNING: Skipped test Wick's limit: "Channel 'total' could not be found!"
```

  2. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 0 (n + C_natural): / Form 'eval': / Component 0 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

  3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 0 (n + C_natural): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

  4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 0 (n + C_natural): / Form 'eval': / Component 2 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

  5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 0 (n + C_natural): / Form 'eval': / Component 3 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```